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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,856	02/07/2001	Ami Aronheim	01/21605	3362

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EXAMINER	
MARVICH, MARIA	

ART UNIT	PAPER NUMBER
1636	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/777,856	ARONHEIM ET AL.	
	Examiner	Art Unit	
	Maria B. Marvich, PhD	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,6-11,15-20,24-29 and 33-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,6-11,15-20,24-29 and 33-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to an amendment and request for continued examination filed 2/24/05. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/24/05 has been entered.

Claims 3-5, 12-14, 21-23, 30-32 and 36-49 have been cancelled. Claims 1, 9, 18 and 27 have been amended. Claims 1-2, 6-11, 15-20, 24-29 and 33-35 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 6-11, 15-20, 24-29 and 33-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **These are new rejections.**

Claims 1-2, 6-11, 15-20, 24-29 and 33-35 are vague and indefinite in that the metes and bounds of "suppressive conditions" are unclear. The specification does not define "suppressive" conditions. It is unclear if a "suppressor" must be present or if any "suppressive" condition in which there is a lack of expression is applicable.

Claim 9 is vague and indefinite in that the metes and bounds of "indicative of an interaction between said first polypeptide and said distinct polypeptide" are unclear. The

method involves expressing a library of polynucleotides each of which encodes a distinct polypeptide in cells. As multiple library members can be in each cell, it is unclear how **an** interaction between the first polypeptide and distinct polypeptide can be distinguished given that other interactions between distinct polypeptides and the first polypeptide are possible within the same cell.

Claim Rejections - 35 USC § 112, first paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-2, 6-11, 15-20, 24-29 and 33-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation that the cell lacks "**a** Ras activity" has been added to claims 9-11, 15-20, 24-29 and 33-35. **This rejection is maintained for reasons of record in the office action mailed 8/24/04 and restated below.**

Applicant has not indicated where support for the limitation "**a** Ras activity" is found. The examiner has been unable to find literal support in the originally filed specification for the term "a Ras activity". The specification teaches use of cells lacking Ras activity which by rescue of Ras activity are used as an indication of interaction between a first and second polypeptide.

Neither **a** Ras activity nor specific Ras activity is so described in the specification rather phenotypic expression of Ras is indicative of an interaction between the two polypeptides. Therefore, the limitation of "a Ras activity" is impermissible NEW MATTER.

The limitation that the cells are grown under "suppressive conditions" has been added to claims 1-2, 6-11, 15-20, 24-29 and 33-35. **This is a new rejection necessitated by applicant's amendment.**

Applicant has not indicated where support for the limitation that the cells are grown under "suppressive conditions" is found. The examiner has been unable to find literal support in the originally filed specification for the term "suppressive". The specification teaches use of an inducible promoter and an inducible/repressible promoter. The cells are grown in the presence and absence of inducer. However, suppression of the promoter is not described. Furthermore, it is unclear if applicants intend by "suppressive' conditions use of a suppressor or simply any condition in which expression from the inducible promoter is inhibited. Therefore, the limitation of "suppressive conditions" is impermissible NEW MATTER.

Response to Argument

Applicants traverse the claim rejections under 35 U.S.C. 112, first paragraph on pages 8-9 of the amendment filed 2/24/05. Applicants argue that the cells recite use of cell(s) lacking "Ras activity". Applicants describe a cell lacking Ras activity as any Ras mutated cell provided that restoration of Ras activity produces a detectable signal or change in the phonotype.

Applicants' arguments filed 2/24/05 have been fully considered but they are not persuasive. The claims have been rejected under 35 USC 112, first paragraph for New Matter as

claims 9, 18 and 27 have been amended to recite that the cell or cells lack "**a** Ras activity". The specification does not provide a description or guidance for cells or a cell that lack an activity of Ras. In this case, a single activity corresponding to Ras would need to be identified and characterized and cells in which the specific Ras activity is missing generated. Applicants do not teach which activities of Ras need to be obviated and which do not. In fact, the specification only teaches that cells lack Ras activity (all Ras activity), which is restored upon interaction of a Ras mutant with the cytoplasm.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6-8, 27-29 and 33-35 are rejected under 35 U.S.C. 102(a) as being anticipated by Takemaru and Moon, The Journal of Cell Biology 149(2), April 17, 2000, pages 249-254, see entire document. **This rejection is maintained from the office action mailed 2/5/04 and 8/24/04 and has been reworded based upon applicants' amendment. Upon reconsideration, the rejection has been extended to claims 2, 27-29 and 33-35.**

The amendment to the claims recite that the cells are grown under "suppressive conditions" which result in substantially no expression of said first promoter from inducible

promoter. Given the lack of definition in the instant specification, it is unclear what is intended by "suppressive conditions". It is assumed that by "suppressive conditions" is meant conditions in which the promoter is not induced. A reading of the claims with this meaning of "suppressive" is supported by the specification, which teaches use of the gal promoter for inducible expression in the presence of glucose or galactose (see e.g. figure 3). As well, this meaning is supported by applicants' amendment on page 12, where applicants appear to define suppressive conditions as the presence or absence of inducing or suppressing agents in the media.

Takemaru and Moon teach expression of pRas(61)ΔF-βcatR8-C an expression vector comprising c-HaRas mutant and β-catenin in a cdc25-2 yeast strain (endogenous ras is inactive) (see e.g. page 25, column 1, paragraph 3). Library cDNAs are fused to the v-Src myristoylation sequence targeted to the plasma membrane, or plasmalemma, (as in instant claim 8 and 35). The v-Src myrsitoylation sequence is native to a v-Src gene and therefore meets the limitations of claim 2 and 28. Therefore, the library cDNAs fused to the v-Src myristoylation is on a vector that comprises an inducible galactose promoter driving expression of a first polypeptide. The art has been applied as if this vector meets the limitation of claim 1 in that this is one polypeptide, which is a fusion between two polypeptide sequences and has been applied to meet the limitation of claim 27 in that v-Src is one polypeptide and the library cDNA encodes the second polypeptide.

The library expression vectors were introduced into the Ras transfected yeast strains to identify polypeptides that interact with pRas(61)ΔF-βcatR8-C as characterized by Ras activity. Takemaru and Moon grow transformants on selectable minimal glucose plates and then replica

plated in galactose plates. It is the difference between the two that indicates an interaction between a first and second polypeptide. Following growth of cells under inductive and non-inductive conditions, a clone expressing CBP in complex with b-catenin was identified upon isolation of a subset of cells (see e.g. page 251, column 1, paragraph 4) as in claim 28. The cdc25-2 cells are growth suppressive under non-permissive temperatures as in instant claim 6 and 33. This phenotype is corrected by translocation of the Ras mutant to the plasmalemma as in instant claim 7 and 34.

Response to Arguments

Applicants traverse the claim rejections under 35 USC 102(a) on pages 10-12 of the amendment filed 2/24/05. Applicants argue that the claims have been amended to include a positive step for determining expression of a first polypeptide by reciting that the first polynucleotide is under control of an inducible promoter. The presence of the first polypeptide expression is effected by culturing the transformed cells under inductive or suppressive conditions (presence or absence of inducing or suppressing agents in the media). Therefore, applicants argue that Takemaru and Moon do not describe or suggest a step that distinguishes between cells exhibiting Ras activity from the expressed target polypeptide and Ras activity that results from mobilization of Ras to a non-target plasmalemma polypeptide.

Applicants' arguments filed 2/24/04 have been fully considered but they are not persuasive. Takemaru and Moon express their "first polypeptide", the library of cDNAs fused to v-Src myristoylation sequence under control of an inducible promoter, the galactose promoter. Use of the galactose promoter is specifically disclosed in the instant invention. Furthermore,

Takemaru and Moon grow the Ras mutant cells in the presence and absence of inducer or galactose (page 250, col 2, paragraph 2). Therefore and absent evidence to the contrary, Takemaru and Moon do describe a step that distinguishes between cells exhibiting Ras activity from the expressed target polypeptide and Ras activity that results from mobilization of Ras to a non target plasmalemma polypeptide. As every claim limitation has been met, Takemaru and Moon anticipate the instant invention.

Conclusion

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria B. Marvich, PhD whose telephone number is (571)-272-0774. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel, PhD can be reached on (571)-272-0781. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maria B Marvich, PhD
Examiner
Art Unit 1636

April 14, 2005

Daniel M. Sullivan
Patent Examiner
TC 1600